CLAIMS

1. A peptide which comprises less than the full-length polypeptide sequence of native Tek, and which consists essentially of one or more amino acid sequences which represent one or more epitopes of the Tek protein, which peptide can bind to an MHC molecule and stimulate an immune response.

2. A peptide according to claim 1 which consists essentially of an amino acid sequence representing a single epitope of the Tek protein.

3. A peptide according to claim 1 which consists essentially of an amino acid sequence representing two or more epitopes of the Tek protein.

4. A peptide according to claim 3 wherein the amino acid sequence is such that the said two or more epitopes are contiguous or substantially contiguous.

5. A peptide according to claim 3 or claim 4 wherein the amino acid sequence is substantially devoid of the amino acid sequence that occurs between neighbouring epitopes in the native Tek protein.

6. A peptide according to any one of the preceding claims wherein said one or more amino acid sequences represent an amino acid sequence which appears within an amino acid sequence region selected from TEK1 (amino acids 55 to 90), TEK2 (amino acids 163 to 176), TEK3 (amino acids 345 to 362), TEK4 (amino acids 427 to 442) and/or TEK5 (amino acids 530 to 542) of the Tek polypeptide as shown in Fig. 1 or which appears within equivalent amino acid sequence

regions in a variant form of said Tek polypeptide with substantially the same functional attributes.

7. A peptide according to any one of claims 1 to 6 which comprises one or more of the epitope sequences Z1, Z2, Z3, Z5, Z6, Z7, Z8, Z9, Z11, Z12 and Z32 as set forth in Tables 1 and 4, and/or one or more of a variant form of said "Z" epitope sequences with substantially the same functional attributes.

8. A peptide according to any one of the preceding claims which binds HLA-A2 with a stabilisation ratio of 1.3 or greater.

9. A peptide according to claim 8 which can stimulate T cell proliferation.

10. A peptide according to claim 8 or claim 9 which binds HLA-A2 with a stabilisation ratio of 1.5 or greater.

11. A peptide according to any one of claims 8 to 10 which binds HLA-A2 with a stabilisation ratio of 2.3.

12. A peptide according to any one of the preceding claims which is in an isolated and/or purified form, free or substantially free of material with which it is naturally associated.

13. A polypeptide which comprises a peptide according to any one of claims 1 to 12 and one or more amino acid sequences not characteristic of Tek protein.

14. A polypeptide according to claim 13 which is a

fusion protein.

15. The use of a peptide according to any one of claims 1 to 12 or of a polypeptide according to claim 13 or claim 14 in the formulation of a composition for use in prophylactic and/or therapeutic treatment.

16. The use of a peptide according to any one of claims 1 to 12 or of a polypeptide of claim 13 or claim 14 in the production of epitope-specific antibodies capable of reacting with epitopes of wild-type Tek polypeptide.

17. The use according to claim 16 wherein said antibodies are monoclonal antibodies.

18. An antibody capable of specifically binding to a peptide of any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14.

19. An antibody according to claim 18 which is capable of reacting with wild-type Tek polypeptide.

20. An antibody according to claims 18 or 19 which is a monoclonal antibody.

21. A fragment, derivative, functional equivalent or homologue of an antibody according to claim 18, claim 19 or claim 20, which retains the epitope-specific binding activity of said antibody.

22. A fragment according to claim 21 which comprises an Fab fragment consisting of VL, VH, Cl and CH1 domains; an Fd fragment consisting of VH and CH1 domains; an Fv fragment consisting of VL and VH domains of a single arm of an antibody; a dAb

fragment which consists of a VH domain; an isolated CDR region or $F(ab')_2$ fragment; or a single chain Fv fragment.

23. A cell culture capable of producing an antibody, fragment, derivative, functional equivalent or homologue according to any one of claims 18 to 22.

24. A cell culture according to claim 23 wherein the cells are hybridomas.

25. A nucleic acid sequence which codes for an antibody, fragment, derivative, functional equivalent or homologue according to any one of claims 18 to 22.

26. A recombinant DNA construct or virus vector which comprises a nucleic acid sequence encoding a peptide according to any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14.

27. A recombinant DNA construct or virus vector according to claim 26 which has one or more regulatory sequences for controlling the expression of said peptide.

28. A recombinant DNA construct according to claim 26 or claim 27 which is a plasmid.

29. A host cell containing and capable of expressing a nucleic acid encoding a peptide according to any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14.

30. A method of producing an antibody, fragment, derivative, functional equivalent or homologue

according to any one of claims 18 to 22, including the step of growing a cell capable of producing the antibody under conditions in which the antibody is produced.

31. A pharmaceutical composition for use as a vaccine to target endothelial cells lining the blood vessels of a tumour, said composition comprising a peptide according to any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14 or a recombinant DNA construct or virus vector according to any one of claims 26 to 28.

32. A method of preparing a pharmaceutical composition according to claim 31, said method optionally including the step of combining said peptide, polypeptide, recombinant DNA construct or virus vector with a pharmaceutically acceptable excipient, carrier, buffer or stabiliser.

33. A nucleic acid encoding a peptide of any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14.

34. A method of obtaining a nucleic acid encoding a peptide of any one of claims 1 to 12, the method including hybridising a probe having a sequence encoding a peptide of Tek regions TEK1 to 5 or a peptide as identified in Tables 1 and 4, or a complementary sequence thereof, to target nucleic acid.

35. A method according to claim 34 including the step of amplifying said target nucleic acid by PCR methods.

36. A method of producing a peptide according to any one of claims 1 to 12 or a polypeptide according to claim 13 or claim 14 which includes the step of expressing a nucleic acid of claim 33 in an expression system.

37. A vector comprising a nucleic acid of claim 33.

38. A host cell containing a vector according to claim 37, or a construct, virus or plasmid according to claims 26, 27 or 28.

39. A method of therapeutic or prophylactic treatment of a patient, comprising administering an effective amount of a pharmaceutical composition of claim 31.

40. A method according to claim 39 comprising inoculating said patient at least three times with said pharmaceutical composition, the second inoculation being administered more than two weeks after the first inoculation.

41. A method of therapeutic or prophylactic treatment of a patient, which comprises introducing a sequence encoding a peptide according to any one of claims 1 to 12, or a polypeptide according to claim 13 or claim 14, into target host cells of the patient.

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